

NPIC/TSSG/RED-105/70

2 APR 1970

MEMORANDUM FOR: Director, National Photographic Interpretation Center

SUBJECT : Request for Approval of a Contract with [REDACTED]  
[REDACTED] for Evaluation of Unconven-  
tional Photographic Systems (UPS) at a Cost [REDACTED]  
from FY-1970 R&D Funds

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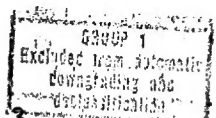
1. This memorandum requests the approval of funds for a follow-on R&D contract. The specific request is stated in paragraph 7.

2. Unconventional Photographic Systems (UPS) currently include dry silver, diazo, free radical, special color emulsions, Dylux, and thermo-plastic deformation materials as well as the processes by which these materials are exposed and processed. Uses of such systems are growing rapidly due to the many advantages they hold over conventional silver halide systems such as cost, convenience, spectral response and image quality. Some of these systems are presently part of, or being incorporated into, the NPIC R&D program while others are under active consideration. A prototype Reader-Printer employing 3M dry-silver material and a compact light table type printer-processor using a dry processed Diazo material are currently under consideration for contract. Other equipment using free-radical or Dupont Dylux has been proposed.

3. Evaluation of UPS materials and processes, especially with regard to setting standards and specifications, is extremely difficult at the present. We have difficulty acquiring pertinent objective data on the characteristics of new UPS. Attempts to gain information from external sources are hampered by the manufacturer's restrained dissemination of proprietary technology and also by the diverse repositories of those data which are available. Where data are obtained, their applicability to our problems cannot be fully assessed because sample preparation and test methods are not fully described; rarely is the statistical significance of the data indicated. The need exists in NPIC for a centralized, readily available source of pertinent, objective data on the new UPS.

4. Currently, the Exploratory Lab/Advanced Technology Branch needs assistance to upgrade its capability for evaluating UPS. This is so because our personnel are oriented toward conventional silver photographic

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systems, the mainstay of Center activity. Here, they are highly competent and well equipped; however, only a portion of this conventional systems capability is applicable to UPS because the chemistry of silver systems is basically different from that of UPS. To complicate matters further, the individual chemistries of the various UPS are different from one another, giving rise to unique capabilities and limitations which must be assessed for each UPS. This fundamental factor renders conventional approaches to determining UPS performance inadequate. We need laboratory procedures and new test methods to determine the characteristics of UPS.

5. To accomplish the two primary tasks of establishing a data base and assisting EL/ATB personnel to become educated in the varied technologies required to be able to evaluate characteristics of UPS materials, we propose a two-year program of contractual assistance. The contractor will assist us in defining the requirements and in laying out a methodology by which an effective library can be established. He will then help to establish the library, by assistance in those technical areas where we are most in need of help; by specifying those properties of the several UPS that are prerequisite to a thorough analysis of their usefulness, and by conducting that analysis. He will also assist in specifying test procedures and laboratory equipments with which EL/ATB can pursue future in-house testing.

6. The first year will include the generation of a plan by which the data library will be established and the initial implementation of that plan. A flow diagram of this phase showing the extent of contractor participation by function is presented on page 10 of the attached proposal. A second year will see full implementation of the plan. By this time we expect to have a basic data library for Center-wide use as well as the internal capability for perpetuating it. The contractor proposes a 12 month effort for the first year at a price of [REDACTED] Monthly progress/fiscal reports will be supplemented by a formal progress report, after 6 months, and a summary final report. Successful completion of the first year's efforts will result in a request to proceed with the second year's contractual assistance at an estimated cost of [REDACTED]

7. Completion of these two years of contractual assistance in data base compilation and establishment of laboratory test procedures will result in an in-house capability within the Advanced Technology Branch to thoroughly evaluate UPS systems and provide standards on a level commen-

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surate with that now possessed in silver halide technology. This in-house laboratory capability will provide a sound foundation and significantly assist the R&D programs of the Center dealing with UPS materials.

8. [ ] is proposed as the contractor. Previous participation in Phase I of this program under [ ] gives this firm advantageous insight into our need for assistance in the proposed program. The broad knowledge of [ ] in reconnaissance exploitation systems and of [ ] in measurements of photographic systems figures heavily in the earlier contract award to [ ] and their continued availability maintains this firm's strong appeal. The proposed price appears reasonable in the light of our previous experience. This contract holds no foreseeable high-risk areas.

9. [ ] will be the project officer for this contract. [ ] is appropriate for this work; the project officer will assign security classifications to the reports.

10. Approval is requested for contract negotiation with [ ]  
[ ] to conduct the program described at a cost not to

[ ]  
Chief, Technical Services & Support Group  
NPIC

Attachments:

1. Proposal
2. Form 2420

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APPROVED: [REDACTED]

ARTHUR C. LUNDAHL

Director

National Photographic Interpretation Center

16 APR 1970

Date

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